PIC/RSN:mc
9 Oct 58

[redacted] research and development program is primarily interested in the following areas in the field of photographic technology: STAT

1. It has been recognized by many that if the base radiation level of the atmosphere were raised significantly, that present photographic materials which are very sensitive to beta radiation would not be usable as a photographic media to record aerial reconnaissance or combat intelligence. Therefore, some means such as electro-static or diaso or other must be developed to take the place of the present silver halide material.

2. The state of the art in high speed photography is of interest but not vital to this development program. We are more interested in the increase in speed in emulsions where an extremely high ASA rating would allow us to use mono-chromatic light to increase the resolutions of an F-1 lens toward the ultimate goal of 1600 lines per millimeter.

3. In order to record spectro-photometric data with narrow band pass filter in multiple camera installations higher speed filtering apparatus will be needed.

4. Electronic or ultra-sonic processing of photographic materials rather than the commonly used solutions are a field of great interest to this development program.

5. Better ways and means for the reproduction of high quality resolutions and gray scales for photographic interpretation work are also being investigated.

6. We are extremely interested in means of increasing the micro density differences between steps on a 300-step gray scale. This is also known as image enhancement.

7. We are investigating such fields as phase contrast and dark field microscopy as well as what is known as areal or spatial filtering to enhance edge gradients so that mensuration by precision comparators is possible at extreme magnifications.

8. We are interested in the field of decreasing the granular structure of present emulsions at fast ASA ratings so that we can use higher magnification in both projection and optical enlarging. We are very interested in the copper halide, zirconium and germanium halide experiments which have been generally going on in this field.

If your laboratories have done significant work in any of the above we would be extremely interested in following up Mr. Pabis' kind help in making your facilities known to us.